



## **COMMONWEALTH of VIRGINIA**

*DEPARTMENT OF ENVIRONMENTAL QUALITY*

PIEDMONT REGIONAL OFFICE

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Matthew J. Strickler  
Secretary of Natural Resources

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Director

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Regional Director

**STATE WATER CONTROL BOARD  
ENFORCEMENT ACTION - ORDER BY CONSENT  
ISSUED TO  
NORTHUMBERLAND COUNTY, VIRGINIA  
FOR  
CALLAO WASTEWATER TREATMENT PLANT  
VPDES Permit No. VA0091421**

### **SECTION A: Purpose**

This is a Consent Order issued under the authority of Va. Code § 62.1-44.15, between the State Water Control Board and Northumberland County regarding the Callao Wastewater Treatment Plant ("Callao WWTP") for the purpose of resolving certain violations of the State Water Control Law, the Regulation and the Permit.

### **SECTION B: Definitions**

Unless the context clearly indicates otherwise, the following words and terms have the meaning assigned to them below:

1. "305(b) report" means the report required by Section 305(b) of the Clean Water Act (33 United States Code § 1315(b)), and Va. Code § 62.1-44.19:5 for providing Congress and the public an accurate and comprehensive assessment of the quality of State surface waters.
2. "Board" means the State Water Control Board, a permanent citizens' board of the Commonwealth of Virginia, as described in Va. Code §§ 10.1-1184 and 62.1-44.7.
3. "County" or "Northumberland" means Northumberland County, a political subdivision of the Commonwealth of Virginia. The County is a "person" with the meaning of Va. Code § 62.1-44.3.
4. "Department" or "DEQ" means the Department of Environmental Quality, an agency of the Commonwealth of Virginia, as described in Va. Code § 10.1-1183.

5. "Director" means the Director of the Department of Environmental Quality, as described in Va. Code § 10.1-1185.
6. "Discharge" means discharge of a pollutant. 9 VAC 25-31-10.
7. "Discharge of a pollutant" when used with reference to the requirements of the VPDES permit program means:
  - (a) Any addition of any pollutant or combination of pollutants to surface waters from any point source; or
  - (b) Any addition of any pollutant or combination of pollutants to the waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation.
8. "DMR" means Discharge Monitoring Report and "eDMR" means an electronic Discharge Monitoring Report.
9. "Effluent" means wastewater – treated or untreated – that flows out of a treatment plant, sewer, or industrial outfall.
10. "Facility," "Plant" or "WWTP" means the Callao Wastewater Treatment Plant located at 104 Harryhogan Road, Callao, Virginia, which treats and discharges treated sewage and other municipal wastes, for the residents and businesses of Callao.
11. "Notice of Violation" or "NOV" means a type of Notice of Alleged Violation under Va. Code § 62.1-44.15.
12. "Order" means this document, also known as a "Consent Order" or "Order by Consent," a type of Special Order under the State Water Control Law.
13. "Permit means VPDES Permit No. VA0091421, which was re-issued on December 1, 2019 under the State Water Control Law and the Regulation, and expires on November 30, 2024.
14. "Pollutant" means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 USC § 2011 *et seq.*)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water... 9 VAC 25-31-10.
15. "Pollution" means such alteration of the physical, chemical, or biological properties of any state waters as will or is likely to create a nuisance or render such waters (a) harmful or detrimental or injurious to the public health, safety, or welfare or to the health of animals, fish, or aquatic life; (b) unsuitable with reasonable treatment for use as present or possible future sources of public water supply; or (c) unsuitable for recreational, commercial, industrial, agricultural, or other reasonable uses, provided that (i) an alteration of the physical, chemical, or biological property of state waters or a discharge or deposit of sewage, industrial wastes or other wastes to state waters by any owner which by itself is not sufficient to cause pollution but which, in combination with such alteration of or discharge or deposit to state waters by other owners, is

sufficient to cause pollution; (ii) the discharge of untreated sewage by any owner into state waters; and (iii) contributing to the contravention of standards of water quality duly established by the Board, are “pollution.” Va. Code § 62.1-44.3.

16. “PRO” means the Piedmont Regional Office of DEQ, located in Glean Allen, Virginia.
17. “Regulation” means the VPDES Permit Regulation, 9 VAC 25-31-10 *et seq.*
18. “State Water Control Law” means Chapter 3.1 (§ 62.1-44.2 *et seq.*) of Title 62.1 of the Va. Code.
19. “State waters” means all water, on the surface and under the ground, wholly or partially within or bordering the Commonwealth or within its jurisdiction, including wetlands. Va. Code § 62.1-44.3.
20. “Va. Code” means the Code of Virginia (1950), as amended.
21. “VAC” means the Virginia Administrative Code.
22. “VPDES” means Virginia Pollutant Discharge Elimination System.
23. “Warning Letter” or “WL” means a type of Notice of Alleged Violation under Va. Code § 62.1-44.15.

#### **SECTION C: Findings of Fact and Conclusions of Law**

1. The County owns and operates the Callao WWTP. The Permit allows the County to discharge treated sewage and other municipal wastes from the Plant to an unnamed tributary to Lodge Creek in strict compliance with the terms and conditions of the Permit.
2. The receiving water is an un-named tributary (“UT”) of Lodge Creek. Lodge Creek is listed in the Department's 2014 305(b) Report as impaired due to the presence of enterococci at levels above water quality standards. The causes of the impairment have been variously described as non-point source or unknown discharges. Lodge Creek is also listed due to the presence of high levels of E. coli. The cause of the E. coli impairment is unknown. Lodge Creek is listed as impaired due to low levels of dissolved oxygen. The causes of the impairment are both natural conditions (low stream velocity) and non-point source discharges.
3. The receiving water is a surface water located wholly within the Commonwealth and is a “state water” under State Water Control Law.
4. The County and Callao WWTP were previously subject to an enforcement action resulting in a Consent Order entered on August 24, 2017. The order detailed corrective action requirements that included: a) clean metals sampling; b) revision of the plant's Operation & Maintenance (“O&M”) Manual to include clean metals sampling and sludge wasting; c) a plan and schedule to upgrade the plant with hardness adjustment equipment for enhanced Zinc precipitation; d) a plan and schedule for a Water Effects Ratio Study supporting a permit modification for Total Recoverable Zinc effluent limits; and e) an alternative plan and schedule to meet Zinc effluent limits in the event upgrades and the referenced study solution do not produce results that are protective of water quality.



5. The Callao WWTP has experienced a pattern of effluent limit violations for Total Recoverable Zinc ("TRZ") on a relatively consistent basis since approximately January 2015.
6. Based on the results of the study and reporting requirements in the Schedule of Compliance of the 2017 Consent Order, Northumberland requested a permit modification on October 5, 2017 for effluent limits for TRZ. Northumberland questioned the accuracy of hardness data submitted to DEQ as part of a 2014 permit reissuance application. Northumberland collected additional hardness data for the plant's effluent and initiated a permit modification request to DEQ. DEQ performed an evaluation using the revised data and determined that a proposed limit of 36 µg/L was not required. The limit of 82 µg/L for TRZ appears in the 2014 Permit, as modified, and the recently reissued 2019 Permit.
7. From May 2018 through January 2019, there was only one month (October 2018) with an exceedance of the permit limit for TRZ. Based on that data, DEQ thought consistent compliance with the permit limit was possible, submission of an alternative plan was not required, and DEQ terminated the 2017 Consent Order on February 14, 2019. However, soon after the order was terminated, Northumberland reported additional exceedances which indicate that full and durable compliance was not achieved. In a written response to Warning Letter No. W2019-12-P-1016 issued on January 21, 2020, Northumberland County acknowledged continuing violations of TRZ effluent limits and expressed concern that the 2017 Consent Order was closed.
8. WL No. W2019-04-P-1005 was issued on April 9, 2019 based on an eDMR submission for the October 2018 monitoring period listing an average and maximum concentration of 87.5 µg/L for TRZ (Parameter 196). The eDMR submitted for the February 2019 monitoring period listed an average and maximum concentration of 114.0 µg/L for TRZ. Part I.A.1 of the 2014 Permit requires an average and maximum concentration limit of 82 µg/L.
9. WL No. W2019-05-P-1010 was issued on May 7, 2019 based on an eDMR submission for the March 2019 monitoring period listing an average and maximum concentration of 122.0 µg/L for TRZ (Parameter 196). Part I.A.1 of the 2014 Permit requires an average and maximum concentration limit of 82 µg/L.
10. WL No. W2019-09-P-1002 was issued on September 5, 2019 based on an eDMR submission for the April 2019 monitoring period listing an average and maximum concentration of 89.2 µg/L for TRZ (Parameter 196). The eDMR submitted for the July 2019 monitoring period listed an average and maximum concentration of 101.0 µg/L for TRZ. Part I.A.1 of the 2014 Permit requires an average and maximum concentration limit of 82 µg/L.
11. WL No. W2019-12-P-1016 was issued on January 7, 2020 based on an eDMR submission for the September 2019 monitoring period listing an average and maximum concentration of 87.8 µg/L for TRZ (Parameter 196). The eDMR submitted for the October 2019 monitoring period listed an average and maximum concentration of 89.2 µg/L for TRZ as identified in NOV Table 1 (below). The eDMR submitted for the November 2019 monitoring period listed an average and maximum concentration of 103.0 µg/L for TRZ as identified in NOV Table 1 (below). Part I.A.1 of the 2014 Permit (modified July 17, 2018) requires an average and maximum concentration limit of 82 µg/L.

12. WL No. W2020-01-P-1006 was issued on February 6, 2020 based on an eDMR submission for the December 2019 monitoring period listing an average and maximum concentration of 132.0 µg/L for TRZ (Parameter 196) as identified in NOV Table 1 (below). Part I.A.1 of the 2019 Permit requires an average and maximum concentration limit of 82 µg/L.
13. WL No. W2020-02-P-1034 was issued on March 10, 2020 based on an eDMR submission for the January 2020 monitoring period listing violation of the parameters identified in NOV Table 1 (below).
14. NOV No. W2020-03-P-0004 was issued on March 27, 2020 based on the eDMR submissions referenced in the foregoing Warning Letters and identified in greater detail in NOV Table 1 (below).
15. In submitting its eDMRs, as required by the Permit, the County has indicated that it exceeded discharge limitations contained in Part I.A.1 of the Permit as provided in Table 1 below.

<b>TABLE 1</b>		<b>Monitoring Period</b>						
<b>Parameter</b>	<b>October 2019</b>	<b>November 2019</b>	<b>December 2019</b>	<b>January 2020</b>	<b>February 2020</b>	<b>March 2020</b>	<b>April 2020</b>	<b>Requirement*</b>
<b>196 Total Recoverable Zinc average concentration (µg/L)</b>	89.2	103.0	132.0	168.0	105.0	110.0	132	82
<b>196 Total Recoverable Zinc maximum concentration (µg/L)</b>	89.2	103.0	132.0	168.0	105.0	110.0	132	82
<b>039 Ammonia as Nitrogen average concentration (mg/L)</b>				1.01				0.63
<b>039 Ammonia as Nitrogen maximum concentration (mg/L)</b>				4.91				0.93
<b>068 TKN maximum concentration (mg/L)</b>				5.1				4.5

\* Part I.A.1 of the 2019 Permit contains conditions that enumerate the identified limits.

Va. Code § 62.1-44.5(A) states “[e]xcept in compliance with a certificate or permit issued by the Board or other entity authorized by the Board to issue a certificate or permit pursuant to this chapter, it shall be unlawful for any person to: 1. Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances; 2. Excavate in a wetland; 3. Otherwise alter the physical, chemical or biological properties of state waters and make them detrimental to the public health, or to animal or aquatic life, or to the uses of such waters for domestic or industrial consumption, or for recreation, or for other uses . . .”

9 VAC 25-31-50(A) states “[e]xcept in compliance with a VPDES permit, or another permit, issued by the board, it shall be unlawful for any person to: 1. Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances; or 2. Otherwise alter the physical, chemical or biological properties of such state waters and make them detrimental to the public health, or to animal or aquatic life, or to the use of such waters for domestic or industrial consumption, or for recreation, or for other uses.”

Part I.A.1 of the Permit contains effluent limitations and monitoring requirements, including monitoring frequencies, which the County is required to meet in the operation of the Callao WWTP.

Part II.F. of the Permit prohibits wastewater discharges from Callao WWTP except in compliance with the terms of the 2019 Permit.

16. DEQ staff met with Northumberland County officials on February 21, 2020 to discuss the foregoing violations. DEQ staff also conducted a site visit on March 17, 2020.
17. Va. Code § 62.1-44.15(5a) states that a VPDES permit is a “certificate” under the statute.
18. The Department has issued no permits or certificates to the County other than VPDES Permit No. VA0020176 and VA0020184.
19. Based on the results of the described reporting, the Board concludes that the County violated Va. Code § 62.1-44.5(A); 9 VAC 25-31-50(A); and Permit effluent limits as described above.
20. In order for the County to complete a return to compliance, DEQ and County representatives have agreed to the Schedule of Compliance, which is incorporated as Appendix A of this Order.

#### **SECTION D: Agreement and Order**

Accordingly, by virtue of the authority granted it in Va. Code §§ 62.1-44.15(8a) and (8d), the Board orders the County, and the County agrees to:

1. Perform the actions described in Appendix A of this Order; and
2. Pay a civil charge of **\$1,850** in settlement of the violations cited in this Order. Such civil charge shall be made in quarterly payments in the amount of \$462.50 on September 30, 2020, December 30, 2020, March 30, 2021, and June 30, 2021.

Payment shall be made by check, certified check, money order or cashier’s check payable to the “Treasurer of Virginia,” and delivered to:

Receipts Control  
Department of Environmental Quality  
Post Office Box 1104  
Richmond, Virginia 23218



The County shall include its Federal Employer Identification Number (FEIN) with the civil charge payment **and** shall indicate that the payment is being made in accordance with the requirements of this Order for deposit into the Virginia Environmental Emergency Response Fund (VEERF). If the Department has to refer collection of moneys due under this Order to the Department of Law, the County shall be liable for attorneys' fees of 30% of the amount outstanding.

#### **SECTION E: Administrative Provisions**

1. The Board may modify, rewrite, or amend this Order with the consent of the County for good cause shown, or on its own motion pursuant to the Administrative Process Act, Va. Code § 2.2-4000 *et seq.*, after notice and opportunity to be heard.
2. This Order addresses and resolves only those violations specifically identified in Section C of this Order. This Order shall not preclude the Board or the Director from taking any action authorized by law, including but not limited to: (1) taking any action authorized by law regarding any additional, subsequent, or subsequently discovered violations; (2) seeking subsequent remediation of the facility; or (3) taking subsequent action to enforce the Order.
3. For purposes of this Order and subsequent actions with respect to this Order only, the County admits the jurisdictional allegations, findings of fact, and conclusions of law contained herein.
4. The County consents to venue in the Circuit Court of the City of Richmond for any civil action taken to enforce the terms of this Order.
5. The County declares it has received fair and due process under the Administrative Process Act and the State Water Control Law and it waives the right to any hearing or other administrative proceeding authorized or required by law or regulation, and to any judicial review of any issue of fact or law contained herein. Nothing herein shall be construed as a waiver of the right to any administrative proceeding for, or to judicial review of, any action taken by the Board to modify, rewrite, amend, or enforce this Order.
6. Failure by the County to comply with any of the terms of this Order shall constitute a violation of an order of the Board. Nothing herein shall waive the initiation of appropriate enforcement actions or the issuance of additional orders as appropriate by the Board or the Director as a result of such violations. Nothing herein shall affect appropriate enforcement actions by any other federal, state, or local regulatory authority.
7. If any provision of this Order is found to be unenforceable for any reason, the remainder of the Order shall remain in full force and effect.
8. The County shall be responsible for failure to comply with any of the terms and conditions of this Order unless compliance is made impossible by earthquake, flood, other acts of God, war, strike, or such other unforeseeable circumstances beyond its control and not due to a lack of good faith or diligence on its part. The County shall demonstrate that such circumstances were beyond its control and not due to a lack of good faith or diligence on its part. The County shall notify the DEQ Regional Director verbally within 24 hours and in writing within three business days when circumstances are anticipated to occur, are occurring, or have occurred that may delay compliance or cause noncompliance with any requirement of the Order. Such notice shall set forth:

- a. the reasons for the delay or noncompliance;
- b. the projected duration of any such delay or noncompliance;
- c. the measures taken and to be taken to prevent or minimize such delay or noncompliance; and
- d. the timetable by which such measures will be implemented and the date full compliance will be achieved.

Failure to so notify the Regional Director verbally within 24 hours and in writing within three business days, of learning of any condition above, which the parties intend to assert will result in the impossibility of compliance, shall constitute a waiver of any claim to inability to comply with a requirement of this Order.

9. This Order is binding on the parties hereto and any successors in interest, designees and assigns, jointly and severally.
10. This Order shall become effective upon execution by both the Director or his designee and the County. Nevertheless, the County agrees to be bound by any compliance date which precedes the effective date of this Order.
11. This Order shall continue in effect until:
  - a. The Director or his designee terminates the Order after the County has completed all of the requirements of the Order;
  - b. The County petitions the Director or his designee to terminate the Order after it has completed all of the requirements of the Order and the Director or his designee approves the termination of the Order; or
  - c. the Director or Board terminates the Order in his or its sole discretion upon 30 days' written notice to the County.

Termination of this Order, or any obligation imposed in this Order, shall not operate to relieve the County from its obligation to comply with any statute, regulation, permit condition, other order, certificate, certification, standard, or requirement otherwise applicable.

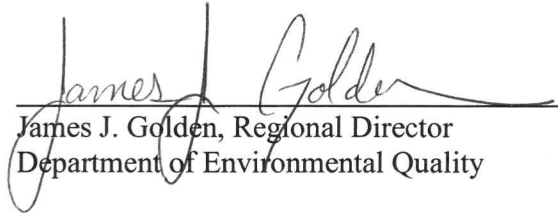
12. Any plans, reports, schedules or specifications attached hereto or submitted by the County and approved by the Department pursuant to this Order are incorporated into this Order. Any non-compliance with such approved documents shall be considered a violation of this Order.
13. The undersigned representative of the County certifies that he or she is a responsible official authorized to enter into the terms and conditions of this Order and to execute and legally bind the County to this document. Any documents to be submitted pursuant to this Order shall also be submitted by a responsible official of the County.
14. This Order constitutes the entire agreement and understanding of the parties concerning settlement of the violations identified in Section C of this Order, and there are no representations,



warranties, covenants, terms or conditions agreed upon between the parties other than those expressed in this Order.

15. By its signature below, the County voluntarily agrees to the issuance of this Order.

And it is so ORDERED this 22 day of September, 2020.

  
James J. Golden, Regional Director  
Department of Environmental Quality

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Northumberland County voluntarily agrees to the issuance of this Order.

Date: 7/21/2020 By: E. Luttrell Tadlock, County Administrator  
(Person) (Title)

Commonwealth of Virginia

City/County of Northumberland

The foregoing document was signed and acknowledged before me this 21 day of

July, 2020, by E. Luttrell Tadlock who is

the County Administrator of the Northumberland County, on behalf of the County.

Dana V. Wilson  
Notary Public

7037310  
Registration No.

My commission expires: 4/30/22

Notary seal:



## **APPENDIX A SCHEDULE OF COMPLIANCE**

1) **Goal Description of Corrective Action.** Adsorption of zinc onto activated sludge flocs/biopolymers can be optimized to increase zinc removal and meet the monthly VPDES permit limit of 82 ug/L for total recoverable zinc. The Callao membrane bioreactor system currently operates at a long solids retention time ("SRT"), 75+ days, which is facilitated by the membrane's secondary clarifier attributes. Additionally, the waste activated sludge ("WAS") facilities at the Callao plant are not adequate to operate at lower SRTs. A key aspect of optimizing zinc adsorption onto the activated sludge flocs/biopolymers is to operate at a more typical cold-weather SRT (i.e. 30 days) during the winter months and 15 days during the summer months. A lower sludge age will increase the zinc adsorption capacity onto the activated sludge flocs. Additionally, acetic acid may be fed as a supplemental carbon source to generate additional activated sludge flocs and provide additional zinc adsorption capability.

Based upon current plant performance utilizing clean sampling techniques, zinc removal requires improvement from the current average value of 118 ug/L to below the permit limit of 82 ug/L, an improvement over existing performance by approximately 30% based upon CY 2020 data. To achieve this goal, the project will modify the existing Membrane Bioreactor control system to include improving aeration and mixing to achieve optimized process performance of the system, as well as mechanical sludge thickening system to accommodate greater WAS mass. The mechanical sludge thickening system will thicken 9,000 mg/L WAS to approximately 50,000 mg/L TSS; thus reducing the volume of WAS to haul to the Reedville plant by 82 percent and enabling 15-30 day operating solids retention time. An in-line equalization basin will also be constructed to dampen any diurnal swings of influent to provide a more uniform feed concentration of all parameters to the membrane bioreactor system.

2) **Submittal of Preliminary Engineering Study ("PER").** Submit to DEQ for review and coordination a PER for the Callao WWTP to evaluate alternatives to upgrade the plant to meet TRZ permit limits as described. The content of such PER shall include, but not be limited to a Plan and Schedule of Construction describing in detail, planned upgrades to the Callao WWTP to achieve all permit limits no later than April 1, 2023. Northumberland County shall submit to DEQ for review and approval such Preliminary Engineering Study on or before October 1, 2020.

3) **Pretreatment Industrial User Survey.** The Callao WWTP Permit requires timely completion of a Pretreatment – SIU Survey that identifies all industrial users discharging to Callao WWTP by September 1, 2020. Based on the results of the SIU Survey, the County shall conduct a focused investigation to identify influent sources containing metals with an emphasis on Total Recoverable Zinc ("TRZ"). The focused investigation shall be complete and submitted for DEQ review on or before October 1, 2020. Pursuant to Part I.D.13, if an Industrial User is identified, or if the County or DEQ determines that the Industrial User has potential to adversely affect the operation of Callao WWTP or cause violation(s) of federal, state or local standards or requirements, the County may be required to develop and submit to DEQ within one year a pretreatment program for approval.

4) Unless otherwise specified in this order, all submittals required by Appendix A shall be forwarded to: PRO Enforcement Office, 4949A Cox Road, Glen Allen, Virginia 23060.



